

**STAFFORD COUNTY SCHOOL BOARD**  
**Agenda Consideration**

**TOPIC:** Award of Contract: Mechanical &  
Electrical Commissioning  
Services – MS2008

**ITEM NO:** 4C

**PREPARED BY:** Scott Horan,  
Executive Director  
Planning & Construction

**MEETING:** September 12, 2006  
**ACTION DATE:** September 26, 2006  
**INFORMATION ONLY:** N/A

Andre' A. Nougaret,  
Interim Superintendent

---

**ACTION REQUESTED BY THE SUPERINTENDENT:** That the School Board approve the award of a contract in the amount of TBD to Hurd & Obenchain Consulting Engineers of 11508 Allecingie Parkway, Richmond, Virginia to provide mechanical and electrical commissioning services for MS2008.

---

**KEY POINTS:**

1. MS2008 construction project is a traditional design, bid, build procurement effort using the Stafford County prototypical middle school design. The construction contract was awarded to Scheibel Construction of Huntingtown, Maryland. Award contract cost is \$26.7M. Contract substantial completion date is June 1, 2008. Site clearing has begun.

2. Key Project Data:

▪ Award cost:	\$26.7M
▪ Approved Change Orders:	\$.0M
▪ Current cost:	\$26.7M
▪ Cost Growth:	0%
▪ Schedule Growth	0 Days

3. The two (2) largest and most complex building systems typically associated with school construction are the mechanical and electrical systems which include HVAC, emergency generators and digital control systems. These systems are the heart and soul of a building and the ultimate success of the building performance lies in the ability for these systems to work correctly. Most warranty and service issues in the first two years of a new buildings operation involve the poor or non-performance of the mechanical and electrical systems (e.g., the system not operating as expected and/or was never set up from day one to operate correctly). In an effort to combat this issue, the design and construction industry developed building commissioning. Building commissioning has been used for many years, however, it was not until the last 10 – 15 years that it became standardized and governed by a national board. Building commissioning includes all major building systems including mechanical, electrical, plumbing, roof, pavement, structural and special equipment. However, the majority of commissioning efforts focus on the mechanical and electrical systems.

**4. What is mechanical and electrical commissioning?** Today's mechanical and electrical building systems must be energy efficient, satisfy stringent indoor air quality and comfort expectations, operate complex emergency power back up systems and still be designed and constructed within tight budgets. System designs meeting these demands typically have many components, sub-systems and controls. Additionally, building construction involves many specialized trades that often work independent of one another. Ineffective communication and coordination between designers and contractors, and among contractors, can produce mechanical and electrical systems with installation deficiencies that do not perform properly. Without verification of the correct interaction and operations of all systems and components, system performance as specified and intended is unlikely to occur. Commissioning is a systematic process that addresses these issues. It facilitates and ensures the required communication, coordination, testing and verification, and results in the delivery of a building whose mechanical and electrical systems perform as intended. Benefits of commissioning are:

- Reduction of change orders and additional claims
- Fewer project delays
- Managed start-up requirements
- Shorter building turn-over transition period
- Less post-occupancy corrective work
- Minimized effects from design changes
- Improved indoor air quality and occupant productivity
- Better operation, maintenance and reliability
- Lower energy and operations cost
- Value-added quality construction
- Complete and useful O&M documentation

5. Staff has utilized commissioning efforts at several of our school construction projects. The design/build contractor implemented mechanical commissioning at MBES and MVHS. Staff is utilizing limited mechanical (HVAC) commissioning at DSMS, CES and ABES. Staff also plans to propose using full building commissioning for ES2009, a requirement under LEED.

6. Staff would like to implement mechanical and electrical commissioning for MS2008. Estimated cost is \$60K – \$80K. Funding is available within the project budget.

7. If approved by the School Board at the September 26, 2006 meeting, staff plans to execute the contract immediately.

**SCHOOL BOARD GOAL: #5** - Provide facilities that promote student learning and community support.

**#7** - Provide school environments where teachers are safe to teach and students are safe to learn.

**FUNDING SOURCE:** VPSA – MS2008

**AUTHORIZATION REFERENCE:** Stafford School Board Policy 4-29

*February 2006*